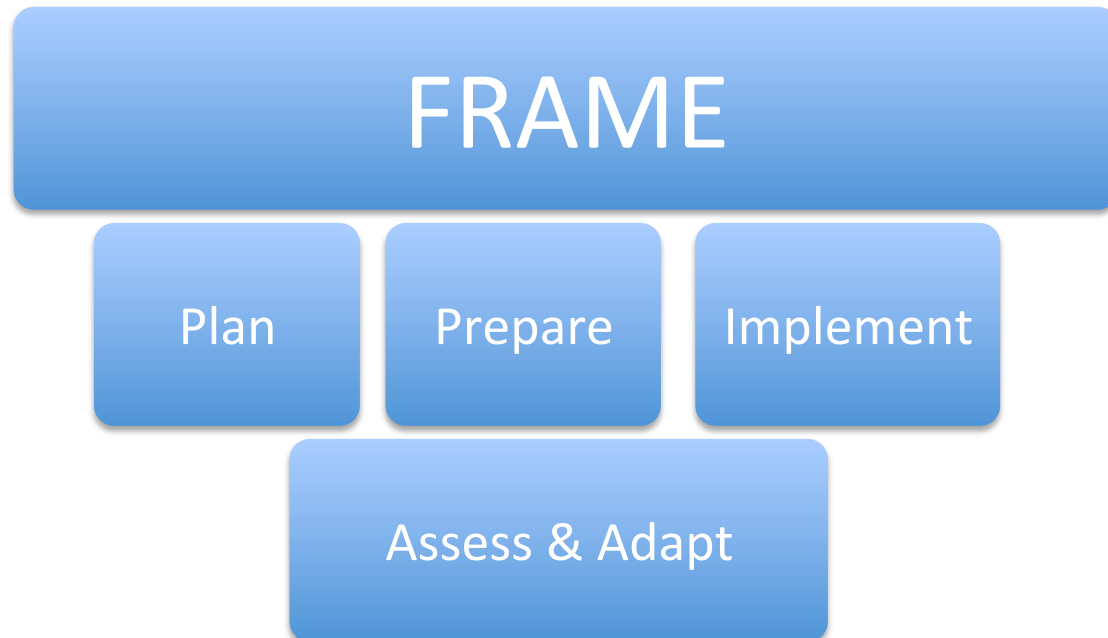

DRAFT: FWS Citizen Science Framework

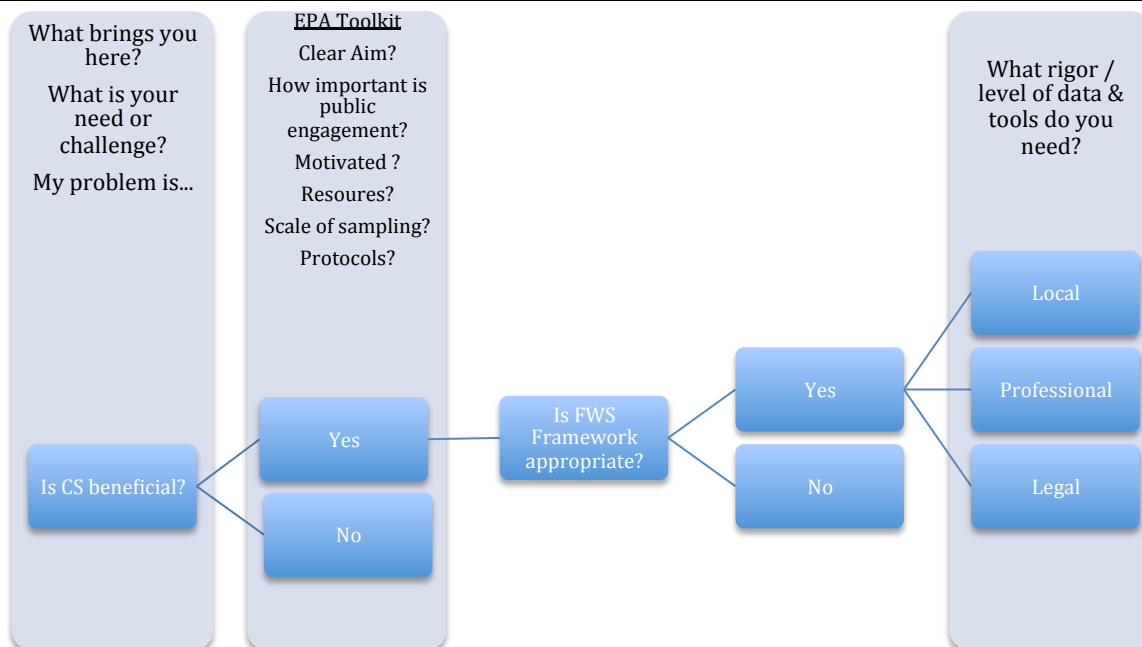
Updated 6/9/2015



Framework Organizing Structure

		FRAME	PLAN	PREPARE	IMPLEMENT	ASSESS & ADAPT
Considerations	General					
	Communication					
	Data					
	Management Support					
	Partners					
	People (Staff & Volunteers)					
	Technology & Infrastructure					
	Training					
	Evaluation Indicators					
Best Practices						
Tools & Resources						

PHASE:		FRAME
Considerations	General	<ul style="list-style-type: none"> What is your need / challenge? My “problem” is... Do you have a clear aim? How important is public engagement? Is CS appropriate? What is the scale of the project (time, space, socio)? What is the CS process design (if developed)?
	Communication	--
	Data	<ul style="list-style-type: none"> What level of data do you need/want (local, professional, legal)? Are there sensitivities around the data? (red flag)
	Management Support (funding, decision-making)	<ul style="list-style-type: none"> What questions does management want to use CS to answer? What management level support is needed? What are the funding needs?
	Partners	--
	People (Staff & Volunteers)	<ul style="list-style-type: none"> What staff skills and areas of expertise are needed? Do you have staff available to support the effort? Do you have a supply of participants? What are the interests of participants?
	Technology & Infrastructure	--
	Training	--
	Evaluation Indicators	
Best Practices		•
Tools & Resources		<ul style="list-style-type: none"> Metadata criteria, fields, standards Decision tree(s) Concept map(s) (e.g., IHMC) Federal Community of Practice Toolkit CitizenScience.org



PHASE:		PLAN
Considerations	General	<ul style="list-style-type: none"> Who are the stakeholders and target audiences? How can we leverage expertise within and across agencies? What is the timeframe within which we are working? What are the project milestones?
	Communication	<ul style="list-style-type: none"> How will we communicate and promote the effort (forum, frequency, audience)?
	Data	<ul style="list-style-type: none"> What data is needed to answer the question or inquiry? What metadata is needed? What projects or data exist that can be used, replicated, or built upon? Is there a protocol that can be adapted, or a need for a new protocol?
	Management Support (funding, decision-making)	<ul style="list-style-type: none"> What information does management need to inform decisions? Are the funding sources available to match the needs?
	Partners	<ul style="list-style-type: none"> What organization(s) has an interest or might be advantageous partners?
	People (Staff & Volunteers)	<ul style="list-style-type: none"> Who is the project team? What are the roles and responsibilities? Have sufficient and representative staff been secured (e.g., VC, science)? What would facilitate staff working across departments?
	Technology & Infrastructure	<ul style="list-style-type: none"> What technology and infrastructure is needed to collect data and accomplish goals?
	Training	<ul style="list-style-type: none"> What skillsets are needed for this effort? Who is the right body to perform training (e.g., NCTC, other agency, FWS)? How will training be managed (funded, administered, etc.)?
	Evaluation Indicators	<ul style="list-style-type: none"> What are the project goals and objectives (short-term and long-term, respectively)? How will we measure project effectiveness? What metrics will we use? What are our targets?
Best Practices		Establish context of citizen science in terms of the overall purpose of the site/refuge, the FWS mission for participants and non-participants.
Tools & Resources		Roadmap / process flow chart Case studies Monitoring plans and templates Communication plans and templates Clearing house of existing projects and data Data collection criteria, protocols, templates, fields, standards Comprehensive conservation plans (CCPs) Habitat Management Plan (HMP)

PHASE:		PREPARE
Considerations	General	<ul style="list-style-type: none"> • How have logistics, safety, and access being managed? • How do we evaluate our programs and assess degree(s) of success?
	Communication	<ul style="list-style-type: none"> • What are the mechanisms and communication events to report data to stakeholders and decision-makers?
	Data	<ul style="list-style-type: none"> • What data collection is needed (the gap between what you need and what you have)? • What data protocols, templates, criteria, fields, etc. are needed? • How will data be collected and accepted? • What data QA/QC and editing is needed? • What is the process to analyze and interpret the data?
	Management Support (funding, decision-making)	<ul style="list-style-type: none"> • What actions can we take based on data and learning? • Has management buy-in / support been attained? • Has funding been sought after and secured?
	Partners	<ul style="list-style-type: none"> • Have the right partner(s) been secured? • Have the roles and responsibilities of the partners been established?
	People (Staff & Volunteers)	<ul style="list-style-type: none"> • Has the right team been assembled? • Have staff communicated and collaborated sufficiently? • Has sufficient volunteer coordination been accomplished (logistics, etc.)?
	Technology & Infrastructure	<ul style="list-style-type: none"> • Has the needed technology and infrastructure been secured?
	Training	<ul style="list-style-type: none"> • What skills do participants have? • What skills do participants need training on? • What training materials need to be collected / developed?
	Evaluation Indicators	<ul style="list-style-type: none"> • Are there specific points in the process that we want to evaluate the process?
Best Practices		
Tools & Resources		Training materials / courses Communication forums (memos, newsletters, email lists, Facebook, Twitter, Collaboration conservation literature etc.) CitizenScience.org Outreach plan Volunteer Management Plan Social media to recruit volunteers HAACP guidance (invasive species) Volunteer policies FCPCCS list serve CITSCI list serve FWS Urban Institute – Tools & Engagement CS project leaders Collaboration conservation literature

PHASE:		IMPLEMENT
Considerations	General	<ul style="list-style-type: none">• Has the project been implemented?
	Communication	<ul style="list-style-type: none">• Has the effort been communicated sufficiently (forums, frequency, audience)?
	Data	<ul style="list-style-type: none">• Has sufficient quality data been collected and accepted?• Has data been QA/QC'd and edited?• Has data been analyzed and interpreted?• Have the findings been determined?• Has the data been used to inform decisions?
	Management Support (funding, decision-making)	<ul style="list-style-type: none">• Have appropriate actions been taken and/or decisions been made based on data and findings?• Is funding sufficient for the ongoing effort?
	Partners	<ul style="list-style-type: none">• Are the partners sufficiently engaged, and contributing as needed/expected?• How successful is the relationship?
	People (Staff & Volunteers)	<ul style="list-style-type: none">• Is the team participating as planned / needed?• Are staff sufficiently engaged and achieving objectives?• Are volunteers executing data collection and reporting as needed / planned?
	Technology & Infrastructure	<ul style="list-style-type: none">• Is the technology and infrastructure supporting the project as needed?
	Training	<ul style="list-style-type: none">• Has training been successfully administered?
	Evaluation Indicators	<ul style="list-style-type: none">• Have the metrics been determined?• How is the process working?• Are we seeing what we expected to see?
Best Practices		
Tools & Resources		<p>Databases: CitSci.org, iNaturalist, eBird, SENSR, liquid-io, Anecdota, Google spreadsheets, Google forms, Google maps, Carto database, Zooniverse, Volgistics, DataOne / DataUP, Monarch JV, Silk, BISON (USGS), Data Basin (USA NPN), Biotics 5 / NatureServe, Dryad, EOL.org, GBIF.org, PPSR_Core data exchange protocol, data.gov, KEPLER, VizTrails, USGS Science bases, data.usgs.gov, data.doi.gov</p> <p>Mobile apps RPV (Drones) GITHUG (code sharing), vistools Hand tools: binoculars, handhelds, ID cards</p>

PHASE:		ASSESS & ADAPT
Considerations	General	<ul style="list-style-type: none"> • Have the program been evaluated on the metrics and criteria as planned? • How well has your initial challenge, question or inquiry been addressed / answered? • How well are we achieving our goals and objectives? • What happens next? How do we adapt and advance the project?
	Communication	<ul style="list-style-type: none"> • Were there any communication gaps or missed opportunities? • How, if at all, can communication be improved upon?
	Data	<ul style="list-style-type: none"> • Is the quality of data sufficient? • Is the quantity of data sufficient? • Are there gaps in the data? • Do the findings sufficiently inform the question(s) at hand? • What improvements, if any, can/should be made regarding data?
	Management Support (funding, decision-making)	<ul style="list-style-type: none"> • Does management have the information it needs to inform decisions? • Is the funding sufficient for continuation (or completion) of the project?
	Partners	<ul style="list-style-type: none"> • What improvements, if any, can be made in the partnering relationship?
	People (Staff & Volunteers)	<ul style="list-style-type: none"> • Is the team structure working? Would adjustments be useful? • What, if any, adjustments can/should be made to staff? • How (if at all) can volunteer management and engagement be improved upon?
	Technology & Infrastructure	<ul style="list-style-type: none"> • How well did/does the technology and infrastructure support the goals and objectives? • What changes to technology and infrastructure would be useful to the effort?
	Training	<ul style="list-style-type: none"> • Have participants been sufficiently trained? • What, if any, improvements can / should be made to training?
	Evaluation Indicators	<ul style="list-style-type: none"> • How do the metrics compare with targets?
Best Practices		
Tools & Resources		Cornel Evaluation User Guide Citizen Science List Serve FCPCCS List serve DEVISE Surveys Advancement opportunities for FWS staff based on contributions